



Figure 5. Round-headed borer egg laying site.



Figure 6. Hickory agrilus galleries



Figure 7. Hickory agrilus damage

SIGNS CONT.

The galleries of many borers are often very distinct. Characteristic galleries are sometimes used in combination with the identification of the host tree to identify a pest. The hickory agrilus (Buprestidae) has a very distinct zigzag gallery (fig. 6) that is sometimes seen through the bark after callus tissue formation (fig. 7). Bark beetles can also have distinct galleries as with the hickory bark beetle (fig. 8) and smaller European elm bark beetle (fig. 9) which have centipede-patterned galleries.

Other common signs of borer activity are stain fungi associated with bark beetles and siricid wasps. Additionally, pine trees can show resin flow from entry and exit holes.

MANAGEMENT

Because most borers are not the cause of tree death and decline, management is usually not necessary. Those insects most often become significant in stands that are overstocked or suffering heavily from stresses such as severe drought or dramatic competition with invasive plants.

You won't find a tree without some kind of borer association. Usually, any tree will have multiple species of borers associated with it. So, galleries under the bark of a dead or highly stressed tree is often nothing to worry about. In other cases, such as with invasive exotic species, it is best to learn about those pests and the similar non-pest species in the area.

FYI

The cottonwood borer (fig. 10) is one of Kentucky's largest borers. It feeds mostly on cottonwood but also on willow and poplar. It can be up to 1.5 inches long as an adult and larva. The adult length doesn't include the very long antennae. Cottonwood borer larvae feed in the roots near the crown and in the lower bole.

PHOTO CREDITS

- Figure 1, 5, 6, 7, 8— James Solomon, USDA Forest Service, Bugwood.org
- Figure 2— Robert L. Anderson, USDA Forest Service, Bugwood.org
- Figure 3— Natasha Wright, FDACS, Bugwood.org
- Figure 4— Daniel Herms, The Ohio State University, Bugwood.org
- Figure 9— William M. Ciesla, Forest Health Management International, Bugwood.org
- Figure 10— Charles T. Bryson, USDA ARS, Bugwood.org

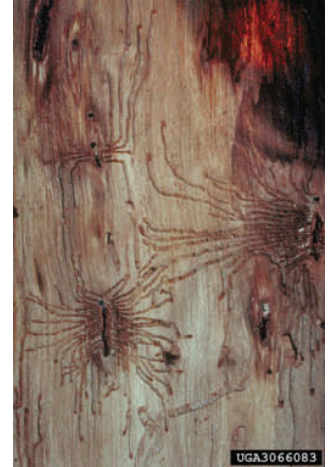


Figure 8. Hickory bark beetle galleries

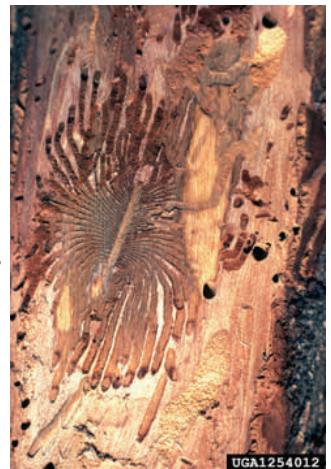


Figure 9. Smaller European elm bark beetle galleries



Figure 10. Cottonwood borer